UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,273	02/24/2004	Lowell L. Winger	03-1431 1496.00341	3873

22501   7590   09/21/2010
CHRISTOPHER P MAIORANA, PC
LSI Corporation
24840 HARPER
SUITE 100
ST CLAIR SHORES, MI 48080

EXAMINER
ANYIKIRE, CHIKAODILI E

ART UNIT	PAPER NUMBER
2621	

MAIL DATE	DELIVERY MODE
09/21/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>09 July 2010</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-20</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-20</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>24 February 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This application is responsive to application number (10/785273) filed on

February 24, 2004. Claims 1 – 18 are pending and have been examined.

Response to Arguments

2.   Applicant's arguments with respect to claims 1-20 have been considered but are

moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   The factual inquiries set forth in *Graham* v. *John Deere Co.,* 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

  1.   Determining the scope and contents of the prior art.
  2.   Ascertaining the differences between the prior art and the claims at issue.
  3.   Resolving the level of ordinary skill in the pertinent art.
  4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

5.   Claims 1-18 rejected under 35 U.S.C. 103(a) as being unpatentable over Jeon

(US 2004/0066848) in view of Kondo et al (US 2004/0136461, hereafter Kondo).

As per **claims 1 and 10**, Jeon discloses a method and apparatus for determining

a first and a second reference picture used for inter-prediction of a block, comprising the

steps of:

(A) finding a co-located picture and block (paragraph [0088] Ln 1-2; Jeon

discloses the use of the co-located block and using it for intra-mode use, but further

suggests based off the use of motion vectors an inter-mode use for the co-located

block);

(B) determining a reference index (paragraph [0088] Ln 9-12 and [0089]);

(D) using said reference index to determine said second reference picture

(paragraph [0111]); the prior art discloses two reference pictures in a list0 and list1,

which represents a first and second reference picture), wherein said first and second

reference pictures are used for inter-prediction of said current block (paragraph [0111];

as evidenced by Jeon the two reference pictures list0 and list1 are used for inter-

prediction of the B-frame and calculates motion vectors corresponding to each list).

However, Jeon does not explicitly teach mapping the reference index to a lowest

valued reference index in a current reference list.

In the same field of endeavor, Kondo teaches mapping the reference index to a

lowest valued reference index in a current reference list (paragraph [0102]; Kondo

teaches that it selects a smaller which means if there is a selection between to

reference index it would choose the smaller of the two and therefore ensure the lowest is selected).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Jeon with Kondo. Kondo explains that the advantage of using the smallest reference index is improvement in coding efficiency (paragraph [0102]).

As per **claims 2 and 11**, Jeon discloses the method and apparatus according to claims 1 and 10, wherein said block comprises an H.264 direct-mode macroblock or macroblock partition ([0011] Ln 6 – 10; the prior art discloses the direct-mode in conjunction H.264 on a slice level and can also be performed on a marcoblock since a slice is made up of marcoblocks.).

As per **claims 3 and 12**, Jeon discloses the method and apparatus according to claims 1 and 10.

However, Jeon does not explicitly teach wherein step (C) further comprises:

storing a unique identifier for each reference picture, wherein said unique identifier is associated from (i) when said unique identifier was used as an inter-reference in the co-located picture to (ii) when said unique identifier is made available as a potential List0 inter-reference for the current picture.

In the same field of endeavor, Kondo teaches wherein step (C) further comprises:

storing a unique identifier for each reference picture (Fig 1 element 108), wherein said unique identifier is associated from (i) when said unique identifier was used as an inter-reference in the co-located picture to (ii) when said unique identifier is made available as a potential List0 inter-reference for the current picture (paragraph [0102] and [0105] lines 8-9; Kondo teaches that the motion vector refers to a picture of which reference index is the smallest).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Jeon with Kondo. Kondo explains that the advantage of using the smallest reference index is improvement in coding efficiency (paragraph [0102]).

As per **claims 4 and 13**, Jeon discloses the method and apparatus according to claims 1 and 10.

However, Jeon does not explicitly teach further comprising the step of:

storing a unique identifier of a direct-mode reference picture.

In the same field of endeavor, Kondo teaches further comprising the step of:

storing a unique identifier of a direct-mode reference picture (paragraph [0102] and [0105] lines 8-9; Kondo teaches that the motion vector refers to a picture of which reference index is the smallest).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Jeon with Kondo. Kondo explains that the

advantage of using the smallest reference index is improvement in coding efficiency (paragraph [0102]).

As per **claims 5 and 14**, Jeon discloses the method and apparatus according to claims 4 and 13, wherein said direct-mode operates on (i) a macroblock when in a first configuration and (ii) a macroblock partition when in a second configuration ([0087], the prior art discloses four different combination, configurations, for a frame mode and field mode, which are made up of macroblocks; the prior art discloses performing the method on a slice level (paragraph [0011] Ln 6-11; Jeon teaches a frame mode and a field mode and being able to switch between the two these indicate that two configurations).

As per **claims 6 and 15**, Jeon discloses the method and apparatus according to claims 4 and 13.

However, Jeon does not explicitly teach further comprising the step of:

searching the current reference List0 for the lowest valued reference index identifier by said unique identifier and returning the value of said lowest valued reference index.

In the same field of endeavor, Kondo teaches further comprising the step of:

searching the current reference List0 for the lowest valued reference index identifier by said unique identifier and returning the value of said lowest valued reference index (paragraph [0102] and [0105] lines 8-9; Kondo teaches that the motion vector refers to a picture of which reference index is the smallest).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Jeon with Kondo. Kondo explains that the advantage of using the smallest reference index is improvement in coding efficiency (paragraph [0102]).

As per **claims 7 and 16**, Jeon discloses the method and apparatus according to claims 1 and 10, wherein said method and apparatus further comprising the step of:

implementing an interpolative direct-mode prediction and a flexible choice for the picture referenced by a finite index reference (paragraph [0093]; the prior art discloses performing a motion vector prediction, interpolative direct-mode prediction, and the reference pictures are referenced by an index number that is finite).

As per **claims 8 and 17**, Jeon discloses the method and apparatus according to claims 1 and 10, wherein said method is implemented in a video encoder (paragraph [0014] Ln 2-5 and paragraph [0018] Ln 4; the prior art discloses a coding system and makes reference to a compression technique).

As per **claims 9 and 18**, Jeon discloses the method and apparatus according to claims 1 and 10, wherein said method is implemented in a video decoder (paragraph [0018] Ln 1-8; the prior art discloses a coding system and makes reference to a decoded picture therefore a decoder is part of the coding system, which is well known in the art).

Conclusion

6.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHIKAODILI E. ANYIKIRE whose telephone number is (571)270-1445. The examiner can normally be reached on Monday to Friday, 7:30 am to 5 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272 - 7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number: 10/785,273

Page 9

Art Unit: 2621

Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a
USPTO Customer Service Representative or access to the automated information
system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marsha D. Banks-Harold/
Supervisory Patent Examiner, Art Unit 2621
/Chikaodili E Anyikire/
Patent Examiner AU 2621